

REMARKS

By the *Office Action* of 8 October 2002, Paper No. 5, Claims 1-35 are pending in the Application, Claims 1-19 rejected, and Claims 20-35 withdrawn. By the present *Response and Amendment*, the Applicant leaves unchanged Claims 1-19, cancels Claims 20-35, and adds new Claims 36-51. No new matter is believed introduced by the present *Response and Amendment*. It is respectfully submitted that the present Application is in condition for allowance for the following reasons.

1. Election

Applicant affirms the election of the invention of Group I, Claims 1-19.

2. The Pending Claims

Claims 1-19 are in original form.

Claims 20-35 have been cancelled.

New Claims 36-51 are presented, and do not require a fee as Claims 20-35 have been cancelled.

Claims 36-44 ultimately depend from Claim 1, and thus are believed allowable. New independent Claim 45 recites the that the backboard construction is specifically *asymmetrical*, which is defined in view as the mechanical structures, if any, above and below the core. This is clearly shown in the **Figs.** of the present application, and is specifically defined in the *Specification, Page 2, Lines 21-22*. Claims 46-47 ultimately depend from Claim 45, and thus are believed allowable. Claims 48-51 are similarly believed allowable.

3. Claims Rejections under 35 U.S.C. § 103

Claims 1-19 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Mathieu (0000738) in view of Dinkel (3284980). Applicant respectfully traverses this ground of rejection. Applicant respectfully submits that neither of these cited references discloses, teaches or suggests the following recitation, a limitation of all of the Claims 1-19:

A construction element having *an impervious membrane on the lower principal surface of the core*.

The Examiner states that Mathieu discloses a construction element having “a membrane 2 on the lower principal surface of the core to protect the panel”. *Office Action, Page 2*. Applicant respectfully shows the Examiner that Mathieu discloses *manufacturing* a construction element with a membrane covering the conveyor so the conveyor doesn’t get soiled, but it does not disclose a construction element *itself* having the impervious membrane as recited in the Claims

of the present invention. In fact, Mathieu embodies the very essence of the prior art that the present application attempts to improve upon. The membrane **2** of Mathieu is nothing more than a carrier for the conveyor, described as a deficiency in the prior art regarding another patent:

U.S. Reissue Patent No. Re32,037 to Clear is a method for manufacturing cementitious reinforced panels and illustrates a concrete panel **11** having reinforcement layers **12, 13** and a polyethylene layer **20** adjacent one of the layers **12, 13**. Layers **12** and **13** are described as mesh reinforcing elements, preferably constituting fiber mesh like pervious webs, each entrained in hydraulic cement. Layer **20** is a carrier sheet placed under reinforcing element **12** during manufacture. Yet, such methods of constructing backerboards are not only deficient because they produce an inferior wet-area panel, but also because they require the use of a carrier sheet. *Specification, Page 2, Lines 6-13.*

Similarly, while membrane **2** appears in many of the Figs. of Mathieu, Mathieu discloses that the membrane **2** is *not* part of the final construction element or panel, but (just like Clear), this membrane **2** is only a temporary film membrane that protects the cementitious lower surface of the panel from the conveyor belt or support structure during the manufacturing process. This temporary film membrane is typically referred to in the art as a carrier sheet or carrier web. Yet, it is an object of the present invention to rid this requirement of the prior art use of a carrier web:

The present method of constructing the backerboard dispenses with the prior art requirement of a carrier sheet or web. *Specification, Page 3, Lines 6-7.*

In addition to membrane **2**, Mathieu also discloses the consistent use of reinforcing mesh **3** on both the lower and upper principal surfaces of the symmetric panel. Mathieu Figs. 1-4, 7-11, 13 and 13a, which are schematic representations of the steps in the formation of the panel, show a protective film membrane **2** between the conveyor belt **1** and the lower reinforcing mesh **3**. Yet, Mathieu Figs. 5, 6, 12, 14, 14a, 15, 16 and 17, which are schematic cross sectional views of the final panel, *show only the lower reinforcing mesh 3, and no protective film membrane 2*. Again, the membrane **2** of Mathieu is a carrier sheet only used during the manufacturing process of the panel to keep the conveyor **1** clean. It is not a part of the panel.

In the present asymmetrical backerboard panel, an impervious reinforcement membrane **34** is a part of the panel, on the lower principal surface of the panel. By incorporating this impervious reinforcement membrane **34** on the lower principal surface of the panel, the temporary protective film or carrier web normally used during the manufacturing process of

conventional symmetric concrete panels *is eliminated*, as noted at *Specification, Page 6, Line 20*
- *Page 7, Line 12:*

The present manufacturing process 40 has great advantages over the prior art processes. During the manufacture of the standard concrete backerboard, with cementitious surfaces on both sides, the conventional forming conveyor must be protected from contact with the bottom of the core/pervious (as opposed to the present invention's impervious membrane 34) surface while in its plastic state. This is accomplished by the use of a form, a carrier sheet or a disposable carrier web. These forms and carrier sheets are treated with a release agent and remain with the backerboard until it has hardened, at which time the form or carrier sheet is separated from the backerboard, cleaned and recoated with release agent to be reentered into the forming operation. In the case of manufacturing with a carrier web, the web is treated with a release agent and is dispensed onto the forming conveyer where the backerboard is formed on the carrier web. This web remains with the backerboard until it hardens at which time the carrier web is removed and disposed.

The present invention avoids the carrier sheet problem by providing a backerboard with a cementitious surface on only one side, and a high tensile strength impervious membrane 34 on the other side. Manufacturing this improved backerboard with the membrane 34 on the bottom side eliminates the need for a form, a carrier sheet, a release agent or a carrier web. The impervious membrane 34 which is incorporated into the present backerboard composite, essentially becomes a non-disposable carrier web. The manufacturing process thus is greatly simplified by ridding the process and equipment required to treat the carrier or form with release agent, dispensing the carrier or form into the forming process, separating the carrier or form from the backerboard, cleaning the carrier or form, retreating the carrier or form with release agent, and/or dispensing of and disposing of the carrier web. Additionally the cost of the impervious high tensile strength membrane 34 is approximately one-fourth (1/4) of the cost of vinyl coated fiberglass mesh with comparable tensile strength.

It is thus respectfully submitted that neither Mathieu nor Dinkel teach or suggest a construction element having an impervious membrane on the lower principal surface of the core, and thus the § 103 rejection cannot be maintained.

Claims 2, 7, and 17 are rejected by the same cited prior art, and further in view that the use of randomly dispersed chopped fibers in the core would be obvious to anyone having ordinary skill in the art of manufacturing concrete backerboard panels. *Office Action, Page 3.* Applicant respectfully traverses this statement as well. Although the use of random reinforcement fibers has been commonly used with thick voluminous poured concrete structures,

the use of random reinforcement fibers in conventional symmetric concrete backerboard panels has not occurred within the forty-year history of these said panels.

For example, neither Mathieu nor Dinkel require additional tensile reinforcement due to the use of a fiberglass mesh, or skrim, on both the upper and lower principal surfaces of the conventional symmetric backerboard panel. This pervious fiberglass mesh or skrim is an inherently high tensile strength material. Using randomly dispersed reinforcement fibers in the core material allows the option to use a standard weight impervious membrane, which has significantly less tensile strength than fiberglass mesh or skrim, on the lower surface of the present asymmetrical backerboard panel.

Claims 3-6, 9-12, and 19 are rejected by the same cited prior art, and further in view that the use of a membrane being a reinforced polymer membrane, *inter alia*, would be obvious to anyone having ordinary skill in the art of manufacturing concrete backerboard panels. *Office Action, Page 3*. Applicant respectfully traverses this statement as well. Although the impervious materials, reinforced polymer membrane, spunbonded olefin, alkaline resistant dense polymer fiber mat, or waterproof paperboard, have existed for many years, the use of these materials to reinforce symmetrical backerboard panels has not occurred within the forty-year history of these said panels.

For example, Dinkel and Mathieu disclose the use of the same reinforcing mesh on both the upper and lower principal surfaces forming a conventional *symmetrically* reinforced panel. The present *asymmetrical* backerboard has different reinforcing materials; a pervious mesh on the upper principal surface and an impervious reinforcing membrane on the lower principal surface.

4. Fees

No Claim fees are believed due. This *Response and Amendment* is being filed within six months of the *Office Action*, and requires a three month EOT fee of \$465.00. Thus, a check for \$465.00 is submitted herewith. Should any further fees be due, authorization to charge deposit account No. 20-1507 is hereby given.

CONCLUSION

By the present *Response and Amendment*, the Application has been in placed in full condition for allowance. Accordingly, Applicant respectfully requests early and favorable action. Should the Examiner have any further questions or reservations, the Examiner is invited to telephone the undersigned Attorney at 404.885.2773.

I hereby certify that this correspondence is being deposited with the United States Postal Service as Express Mail (Label No. EL812797045US) in an envelope addressed to: Commissioner for Patents, Box Fee Amendment, Washington, D.C. 20231, on 31 March 2003.

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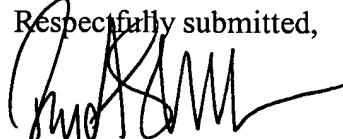
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Signature

31 March 2003

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